Cary Institute of Ecosystem Studies

Group 1 Scenario:

Your class visited a stream on May 18th. You and your classmates take a net and collect insect larvae from the stream, and check sticky traps that were set up a week ago to collect adult mayflies. Count and record the number of larvae and adults you found.

Your class returned to the stream on May 25th and used the same sampling procedure. Count and record the number of larvae and adults you found.

1. Why are you seeing changes in your sampling numbers?

2. You notice the adult mayflies around the stream were swooping down and touching their abdomens to the water. What are the mayflies doing?

Group 2 Scenario:

Your class visited a stream on Monday, May 31st. You and your classmates take a net and collect insect larvae from the stream and check sticky traps that were set up a week ago to collect adult mayflies. Count and record the number of larvae and adults you found.

There was a heavy rainstorm on Friday, June 4th. The stream level rose dramatically, and some flooding occurred in the area.

Your class returned to the stream on Monday, June 7th. Your class used the same sampling procedure. Count and record the number of larvae and adults you found.

1. Why are you seeing changes in your sampling numbers?

2. What evidence could you collect that would support your answer

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Group 3 Scenario:

Your class visited a stream on Monday, June 1st. You and your classmates take a net and collect insect larvae from the stream and check sticky traps that were set up a week ago to collect adult mayflies. Count and record the number of larvae and adults you found.

Your community had record high temperatures and no rain over the course of the week following your sampling day, so the stream level dropped.

Your class returned to the stream on Monday, June 8th. Your class uses the same sampling procedure. Count and record the number of larvae and adults you found.

1. Why are you seeing changes in your sampling numbers?

2. Your teacher suggests that most of the mayfly larvae hatched into adults and left the area/died before the heat wave began. What evidence could you look for to find out if this is true? (Remember that mayflies need to molt a second time after they emerge from the water.)

Group 4 Scenario:

Your class visited a stream on May 20. You and your classmates take a net and collect insect larvae from the stream and check sticky traps that were set up a week ago to collect adult mayflies. Count and record the number of larvae and adults you found.

Your stream is a local hot spot for fly fishing. Over the course of the week, the stream was stocked with trout.

Your class returned to the stream on May 27th. Your class used the same sampling procedure. Count and record the number of larvae and adults you found.

1. Why are you seeing changes in your sampling numbers?

2. What evidence could you collect that would support your answer?

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Group 5 Scenario:

Your class visited a stream on May 15th. You and your classmates take a net and collect insect larvae from the stream and check sticky traps that were set up a week ago to collect adult mayflies. Count and record the number of larvae and adults you found.

Over the course of the week, a local landowner removed much of the vegetation along the stream. The stream is now exposed to a lot more sunlight.

You come back on May 22nd and use the same sampling procedure. Count and record the number of larvae and adults you found.

1. Why are you seeing changes in your sampling numbers?

2. You are going back to sample for mayflies again in two weeks. Do you expect to find more or fewer larvae and adults?

Group Scenario 6:

Your class sampled for aquatic insects in a stream running through a heavily grazed cow pasture. You and your classmates take a net and collect insect larvae from the stream, and check sticky traps that were set up a week ago to collect adult mayflies. Count and record the number of larvae and adults you found.

Another school sampled for aquatic insects in the same stream, but they are sampling five miles upstream from your site in a forested area. Count and record the number of adult and larval mayflies collected by this other group of students.

1. Why would there be a difference in the number of mayfly in their site versus yours?

2. Give examples of biotic and abiotic factors that might affect your samples.

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Class Scenario:

Your class visited a stream on May 15th. You and your classmates take a net and collect insect larvae from the stream. You find 29 mayfly larvae in the area you sampled. You check sticky traps that were set up a week ago over the water, and collect 8 adult mayflies.

In the week since you sampled, there has been construction on the road running parallel to the stream where you sampled. A lot of dirt and sediment from the construction was swept into the river by rainfall.

1. How do you think this might impact the populations of mayfly in the stream when you sample next week?
2. How do you think it might impact populations of mayflies in a year?
3. Think about the different species of mayflies. Do you think they will all be affected equally?